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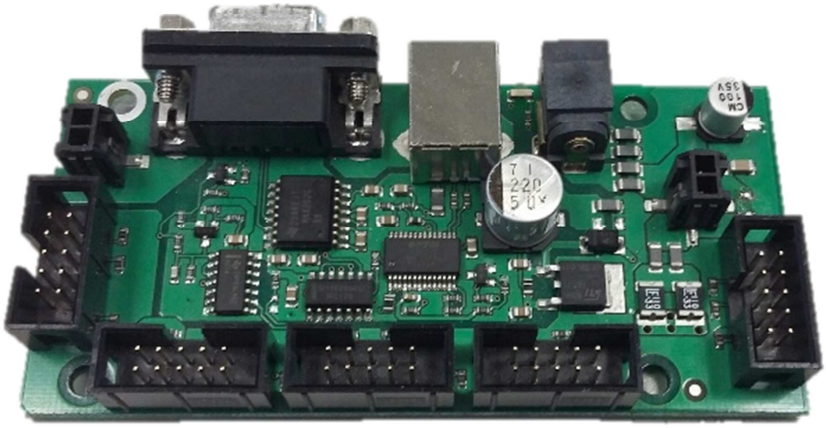

USB/RS232 TO ccTalk COMMUNICATION BOARD

Technical Information

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Manual code: 81043530

	**ATTENTION:** Read this technical manual carefully before installing or carrying out any operation with the board.

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VERSION HISTORY

Date	Version	
18.04.2016	V1	Creation of document

1. INTRODUCTION

This adapter board converts communications from RS232 or USB serial protocol to ccTalk protocol. This way, it offers the possibility to connect a Master device using serial protocol communication to control and monitor ccTalk devices plugged into a bus.

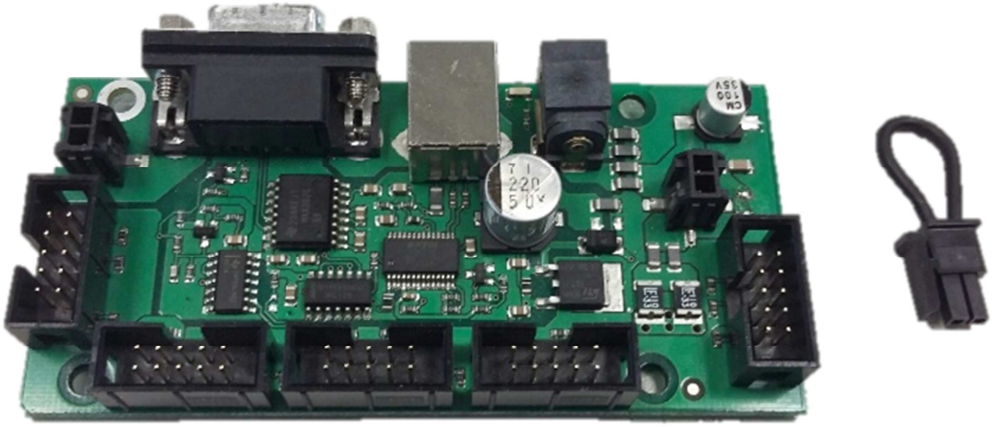


Image 1: Adapter board RS232/USB to CCTalk

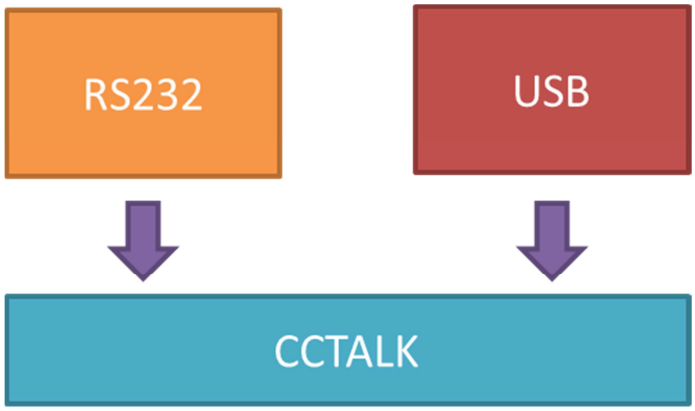


Image 2: Protocol conversion

2. CONNECTORS DIAGRAM

The communication board has the following connectors:

- A1 – A5: 5 2X5 pins ccTalk connectors. They are internally connected, so they can be used interchangeably.
- A6: 12/24 V power supply.
- A7: Type B USB port.
- A8: RS232 port.
- A9: Power switch port. It allows the use of a power switch. If no switch is used, a jumper must be connected.
- A10: Ground connector. It allows connecting the board to the grounding system.

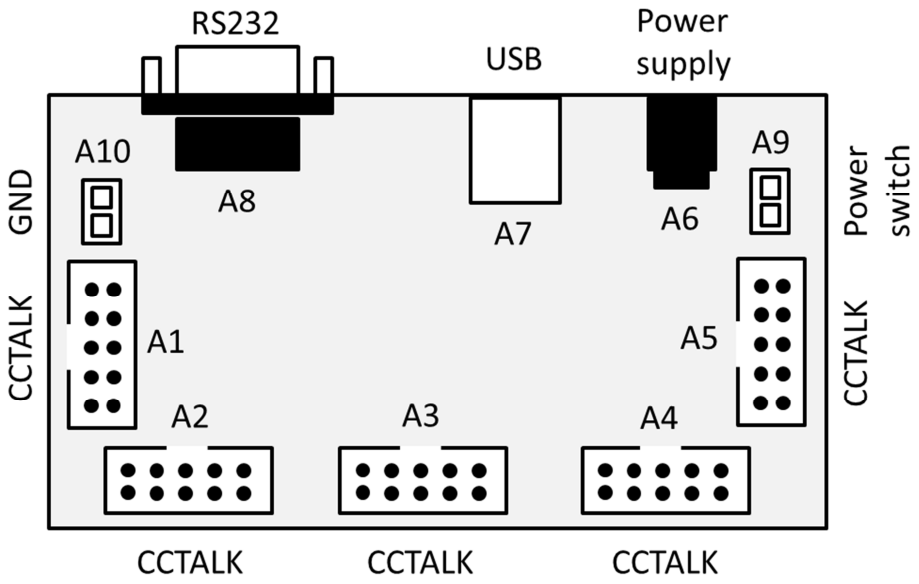


Image 3: PCB connectors

Connector	Description
A1	2x5 pin ccTalk Connector
A2	2x5 pin ccTalk Connector
A3	2x5 pin ccTalk Connector
A4	2x5 pin ccTalk Connector
A5	2x5 pin ccTalk Connector
A6	Power supply
A7	USB
A8	RS232 serial
A9	Power switch
A10	Ground

Table 1: List of connectors

3. FEATURES AND CONNECTIONS

Below there is a description of each of the connectors in the adapter board.

3.1. CCTALK BUS CONNECTORS (A1-A5)

Each of the 5 ccTalk connectors in the adapter board has 10 pins distributed in 2 rows. Their shape allows them to be plugged only in one correct position. The following image shows their shape and the position of each pin.

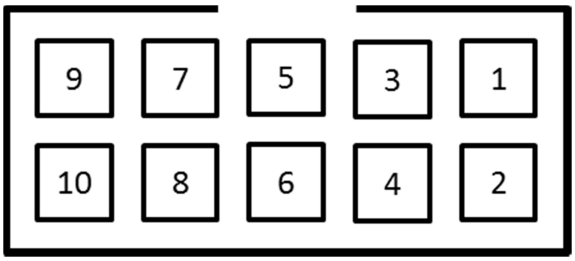


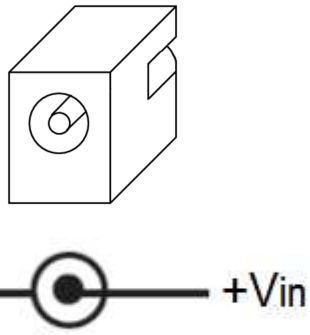
Image 4: ccTalk connector pin out

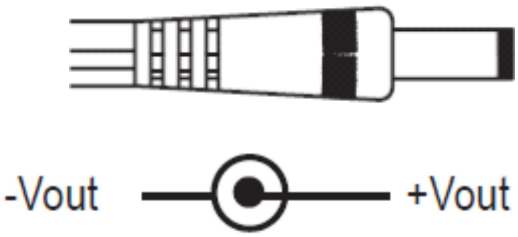
PIN	Description
1	DATA
2	GND
3	-
4	GND
5	-
6	-
7	VCC
8	GND
9	-
10	VCC

Table 2: ccTalk communication pin out

3.2. POWER SOURCE CONNECTOR (A6)

A 12 or 24 V power source must be connected to the board. The following table shows the requirements of the power source, and the connector type it must have.

<table>
<tr><td rowspan="5">Power source specifications</td><td colspan="2">Input</td></tr>
<tr><td>Voltage</td><td>100 - 240 V AC</td></tr>
<tr><td>Current</td><td>Depending on the source</td></tr>
<tr><td colspan="2">Output</td></tr>
<tr><td>Voltage</td><td>12/24 V DC</td></tr>
<tr><td>Power connector on the board</td><td colspan="2"> 

External diameter: 6,3 mm
Male internal diameter: 2,1 mm
+ Vin = 12/24 V
- Vin = GND</td></tr>
<tr><td>Power source connector</td><td colspan="2"> 

External diameter: 5,5 mm
Female internal diameter: 2,1 mm de
11 mm length, “+” center:
+ Vout = 12/24 V
- Vout = GND</td></tr>
</table>

Table 3: Power source specifications

3.3. SERIAL COMMUNICATION

This adapter board has both RS232 and USB serial communication connector, although the communication protocols are defined under the "ccTalk Serial Communication Protocol Generic Specification".

3.3.1. USB PHYSICAL CONNECTION (A7)

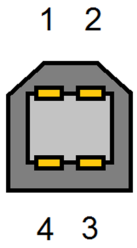
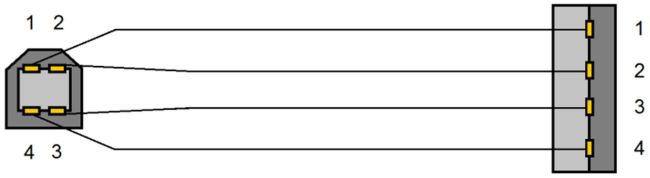
Version	USB 1.1/USB 2.0
Description	Universal Serial Bus (USB)
Connector Type	Type B 
Pin out	PIN1-V_{BUS}, PIN2-D^-, PIN3-D^+, PIN4-GND
Connection type/ wiring(USB)	4-pins 
Max. wire length USB (at max. speed)	Max. delay: 5,2 ns/m Max. length = 5 meters

Table 4: USB communication specification

3.3.2. RS232 PHYSICAL CONNECTION (A8)

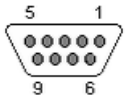
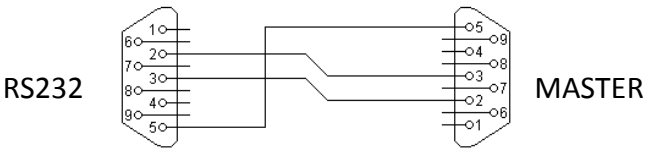
Version	RS2-232/EIA-232
Description	RS-232 (Recommended Standard 232) Serial Port
Connector type	D-SUB 9 Female 
Pin out	PIN2-TXD, PIN3-RXD, PIN5-GND
Connection type/ wiring (master)	3-pin/ null modem 
Max. serial cable length (at 9600bd)	Max. capacitance = 2.500pF Standard quality cable = 15 meters Lower capacitance cable = up to 30 meters

Table 5: RS232 serial communication specification

3.3.3. USB/RS232 DATA TRANSMISSION FORMAT

Baud rate	9600 bauds
Start bits	1
Data bits	8
Parity	No parity
Stop bits	1
Flow control	No
Interface type	Adapter without ECO

Table 6: Transmission parameters

4. SET-UP AND LAUNCH

The board can be connected to a computer both through a USB connection or a RS232 serial connection. Follow these steps in order to set it up:

a) Plug the power source to the adapter board. Doing so, the LED located between the USB and the power ports will turn on. Remember to connect either a switch (a door switch, for instance) or the provided jumper in the "power switch" port (A9). The board can also be connected to the ground through the A10 port.

b) Proceed to connect the ccTalk devices in the 2X5 pin ports (there is no order or position preference).

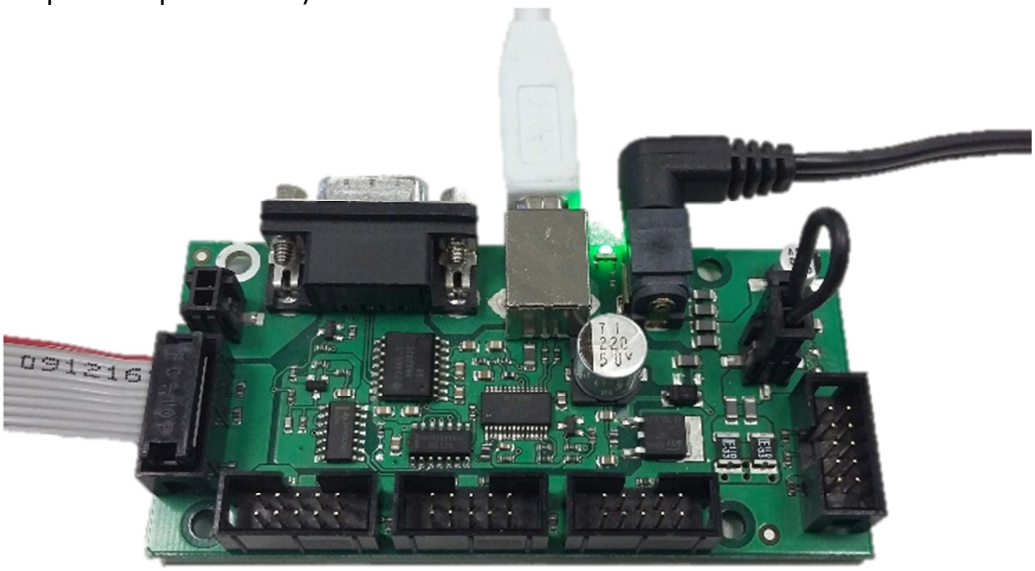


Image 5: Adapter board in use

CONNECTION THROUGH USB

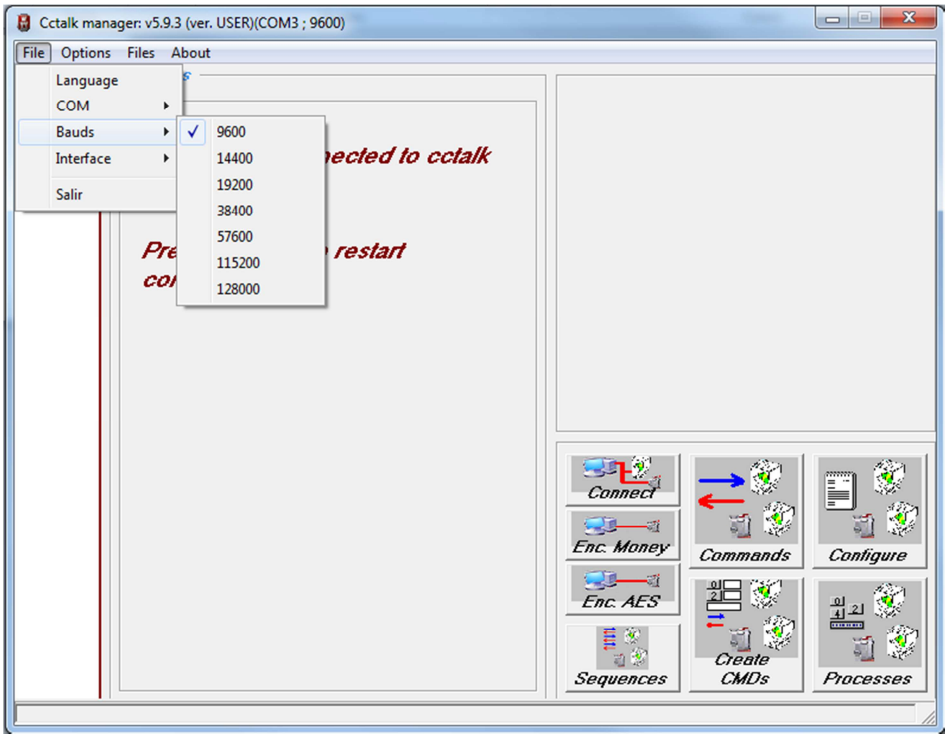
a) Connect the USB cable to the board and a free USB port in your computer

b) The connection will appear as a virtual COM port in the computer. A manual installation of the drivers may be required for its normal functioning. They can be downloaded in the following web site: http://www.ftdichip.com/Drivers/VCP.htm.

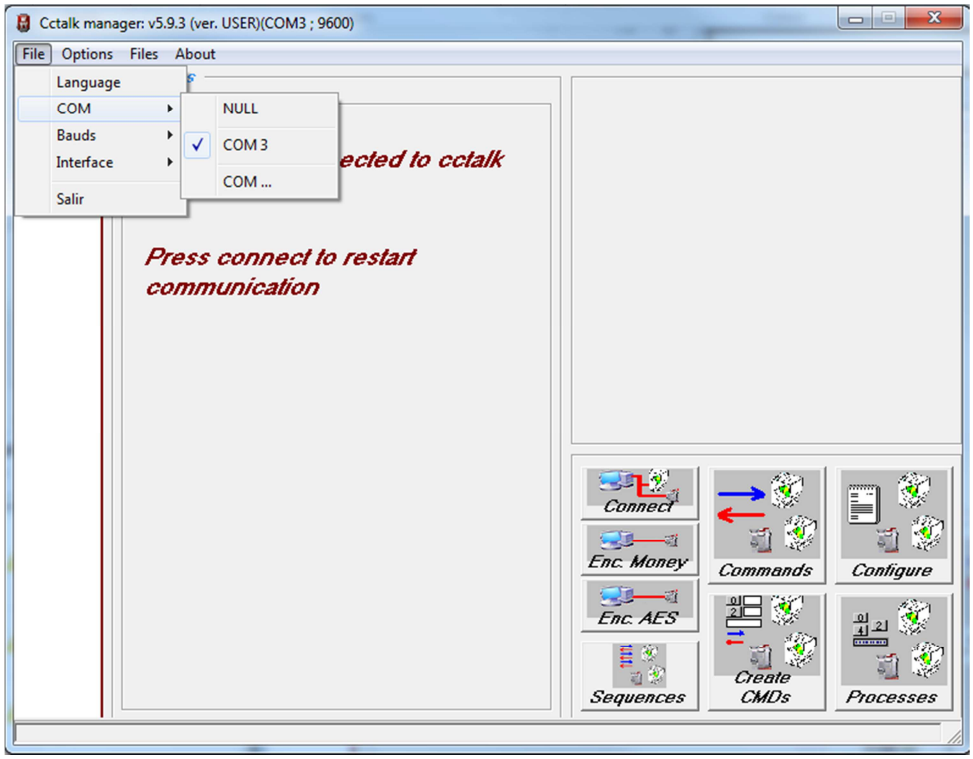
CONNECTION THROUGH RS232

a) Connect the RS232 cable to the board and a free serial port in your computer. If both RS232 and USB ports are connected, the communication will be made through the USB connection.
b) The connection will appear as a COM port in the computer.
c) Launch Azkoyen GestorCCTalk program (also named ccTalkManager). Once it is loaded, the followings connection parameters must be configured:

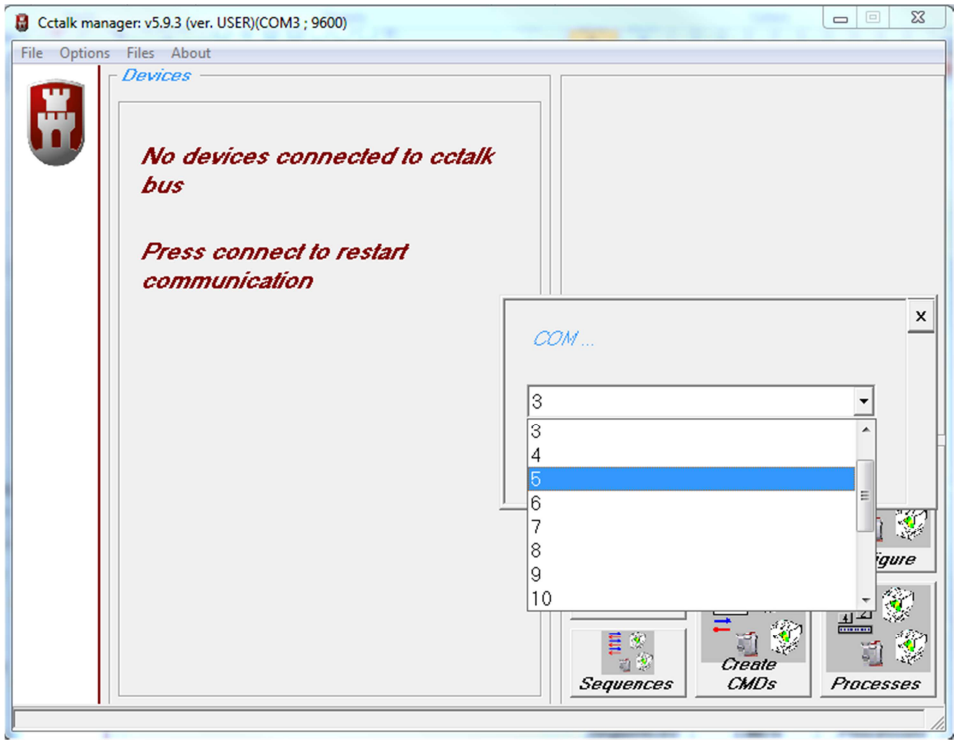
File -> Bauds -> 9600.



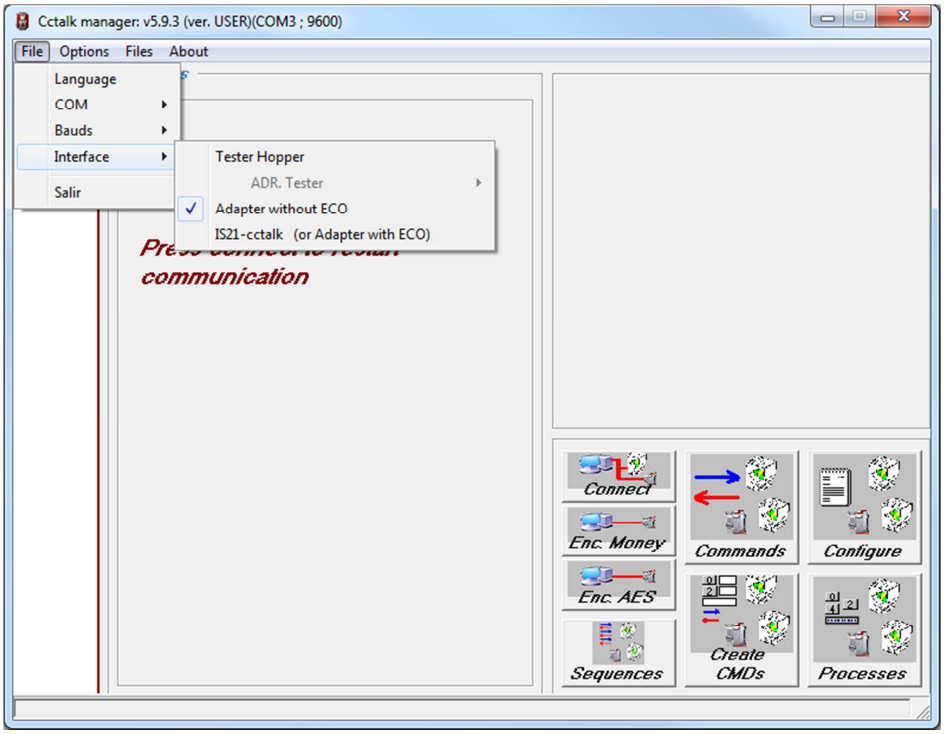
File -> COM -> COM X (Being X the serial COM port number assigned by the computer).



In case the corresponding COM port number does not appear in the menu, choose the option “COM…” (File -> COM -> COM…) and select the number in the drop-down list.



File -> Interface -> Adapter without ECO.



d) Press Connect button. After a short loading time, a list with the devices connected to the board will appear. The program allows to perform a series of basic depuration operations and tests in the different ccTalk devices.